by Schneider Electric

INSTALLATION

IS20/IS21 Series Camclosure® 2 Integrated Camera System

Color and Day/Night Models
Flush Mount, Surface Mount

C3472M-C (9/10)

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Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

The product and/or manual may bear the following marks:

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

CAUTION:

RISK OF ELECTRIC SHOCK.
DO NOT OPEN.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

UL LISTED MODELS

IS21-CHV10S
IS21-CHV10F
IS20-CHV10S
IS20-CHV10F
IS21-DNV10S
IS21-DNV10F
IS20-DNV10S
IS20-DNV10F

WARNINGS

- This apparatus must be earthed.
- To prevent fire or electric shock hazard, do not expose this apparatus to rain or moisture.
- The apparatus should not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, should be placed on the apparatus.
- The connections should comply with local electrical code.
- All work related to the installation of this product should be made by qualified service personnel or system installers.

Power disconnection: Units with or without ON-OFF switches have power supplied to the unit whenever the power cord is inserted into the power source. Unplug the power cord to disconnect the main power for all units.

Precautions

1. This apparatus has no power switch.

   Power is supplied from an external 12 V DC or 24 V AC power-supply device. Refer to service personnel for how to turn on/off the power.

2. To keep on using with stable performance:
   - Parts of this product may deteriorate and it may shorten lifetime of this product when using in locations subject to high temperatures and high humidity (Recommended ambient temperature: below +35 °C). Do not expose the product to direct heat such as from a heater.
   - Use the appliance at temperature within –10 °C to +50 °C and humidity below 90% when using the appliance without turning the power off.

3. Do not drop metallic parts through holes.

   This could permanently damage the apparatus. Turn the power off immediately and contact qualified service personnel for service.

4. Do not rub your hands along the metallic edges.

   This could cause injury.

5. Do not attempt to disassemble the camera.
   - To prevent electric shock, do not remove screws or covers.
   - There are no user-serviceable parts inside. Ask qualified service personnel for servicing.

6. Handle the camera with care.

   Do not abuse the camera. Avoid striking, shaking, etc. The camera could be damaged by improper handing or storage.

7. Do not touch the dome cover with your bare hands.

   A dirty dome cover causes deterioration in picture quality.

8. Cleaning the camera body:
    - Turn the power off when cleaning the product. Use a dry cloth to clean the product.
    - Do not use strong abrasive detergent when cleaning the product body. When the dirt is hard to remove, use a mild detergent and wipe gently. Then, wipe off the remaining detergent with a dry cloth; otherwise, it may cause discolouration.
    - When using a chemical cloth for cleaning, read the caution provided with the chemical cloth product.
9. Discolouration on the CCD color filter:

    When continuously viewing a bright light source such as a spotlight, the color filter of the CCD may have deteriorated and it may cause discolouration. Even when changing the fixed viewing direction after continuously viewing a spotlight for a certain period, the discolouration may remain.
10. Do not aim the camera at strong light sources.

    A light source such as a spot light causes a blooming (light bleeding) or a smear (vertical lines).
11. Use this product for indoor use only.

    Do not expose this product to direct sunlight for hours and do not install the product near a heater or an air conditioner as this may cause deformation, discolouration, and malfunction. Keep this product away from water.
12. Avoid installing in the following locations.
    - Locations where it may get wet from rain or water splash
    - Locations where a chemical agent is used such as a swimming pool (indoor and outdoor)
    - Locations subject to steam and oil smoke such as a kitchen
    - Locations near flammable gas or vapor
    - Locations where radiation or x-ray emissions are produced
    - Locations subject to strong magnetic field or radio waves
    - Locations where corrosive gas is produced
    - Locations where it may be damaged by briny air such as seashores
    - Locations where the temperature is not within –10 °C to +50 °C.
    - Locations subject to vibrations (this product is not designed for on-vehicle use.)
13. Installing site:

    Contact your dealer for assistance if you are unsure of an appropriate place in your particular environment.
14. Do not install the camera in a humid or dust-laden environment; otherwise, the lifetime of the internal parts may be shortened.
15. Be sure to remove this apparatus if it is not in use.
16. Radio interference:

    When the product is used near a TV/radio antenna, strong electric field, or magnetic field (near a motor or a transformer), images may be distorted and audible noise may be produced.
17. Mounting screws:

    It is necessary to procure screws or bolts to mount the product. Prepare them according to the material and strength of the area where the camera is to be installed. The screws and bolts must be tightened with an appropriate tightening torque according to the material and strength of the installation area.

We declare under our sole responsibility that the product to which this declaration relates is in conformity with the standards or other normative documents following the provisions of Directives 2006/95/EC and 2004/108/EC.

Wij verklaren als enige aansprakelijke, dat het product waarop deze verklaring betrekking heeft, voldoet aan de volgende normen of andere normatieve documenten, overeenkomstig de bepalingen van Richtlijnen 2006/95/EC en 2004/108/EC.

Vi erklærer os eneansvarlige for, at dette produkt, som denne deklaration omhandler, er i overensstemmelse med standarder eller andre normative dokumenter i følge bestemmelserne i direktivene 2006/95/EC og 2004/108/EC.

Vi deklarerar härmed värt fulla ansvar för att den produkt till vilken denna deklaration hänvisar är i överensstämmelse med standarddokument, eller andra normativa dokument som framstölls i direktiv nr. 2006/95/EC och 2004/108/EC.

Ilmoitamme yksinomaisella vastuullamme, että tuote, jota tämä ilmoitus koskee, noudattaa seuraavia standardeja tai muita ohjeellisia asiakirjoja, jotka noudattavat direktiivien 2006/95/EC ja 2004/108/EC säädöksiä.

Vi erklærer oss alene ansvarlige for at produktet som denne erklæringen gjelder for, er i overensstemmelse med følgende normer eller andre normgivende dokumenter som følger bestemmelsene i direktivene 2006/95/EC og 2004/108/EC.

Wir erklären in alleiniger Verantwortung, daß das Produkt, auf das sich diese Erklärung bezieht, mit den folgenden Normen oder normativen Dokumenten übereinstimmt. Gemäß den Bestimmungen der Richtlinie 2006/95/EC und 2004/108/EC.

Nous déclarons sous notre propre responsabilité que le produit auquel se réfère la présente déclaration est conforme aux normes spécifiées ou à tout autre document normatif conformément aux dispositions des directives 2006/95/CE et 2004/108/CE.

Nosotros declaramos bajo nuestra única responsabilidad que el producto a que hace referencia esta declaración está conforme con las normas u otros documentos normativos siguiendo las estipulaciones de las directivas 2006/95/CE y 2004/108/CE.

Noi dichiariamo sotto nostra esclusiva responsabilità che il prodotto a cui si riferisce la presente dichiarazione risulta conforme ai seguenti standard o altri documenti normativi conformi alle disposizioni delle direttive 2006/95/CE e 2004/108/CE.

Regulatory Notices

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

RADIO AND TELEVISION INTERFERENCE

This equipment has been tested and found to comply with the limits of a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Changes and Modifications not expressly approved by the manufacturer or registrant of this equipment can void your authority to operate this equipment under Federal Communications Commission's rules.

In order to maintain compliance with FCC regulations shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and television reception.

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

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Disclaimer of Warranty

IN NO EVENT SHALL PELCO BE LIABLE TO ANY PARTY OR ANY PERSON, EXCEPT FOR REPLACEMENT OR REASONABLE MAINTENANCE OF THE PRODUCT, FOR THE CASES, INCLUDING BUT NOT LIMITED TO BELOW:

1. ANY DAMAGE AND LOSS, INCLUDING WITHOUT LIMITATION, DIRECT OR INDIRECT, SPECIAL, CONSEQUENTIAL OR EXEMPLARY, ARISING OUT OF OR RELATING TO THE PRODUCT;
2. PERSONAL INJURY OR ANY DAMAGE CAUSED BY INAPPROPRIATE USE OR NEGLIGENT OPERATION OF THE USER;
3. UNAUTHORIZED DISASSEMBLE, REPAIR OR MODIFICATION OF THE PRODUCT BY THE USER;
4. INCONVENIENCE OR ANY LOSS ARISING WHEN IMAGES ARE NOT DISPLAYED, DUE TO ANY REASON OR CAUSE INCLUDING ANY FAILURE OR PROBLEM OF THE PRODUCT;
5. ANY PROBLEM, CONSEQUENTIAL INCONVENIENCE, OR LOSS OR DAMAGE, ARISING OUT OF THE SYSTEM COMBINED BY THE DEVICES OF THIRD PARTY;
6. ANY CLAIM OR ACTION FOR DAMAGES, BROUGHT BY ANY PERSON OR ORGANIZATION BEING A PHOTOGENIC SUBJECT, DUE TO VIOLATION OF PRIVACY WITH THE RESULT OF THAT SURVEILLANCE-CAMERA'S PICTURE, INCLUDING SAVED DATA, FOR SOME REASON, BECOMES PUBLIC OR IS USED FOR THE PURPOSE OTHER THAN SURVEILLANCE.

Description

The IS20/IS21 Series Camclosure® 2 camera system integrates a camera and lens package into a small versatile indoor enclosure that can be mounted directly to, or recessed into, a ceiling or wall. The IS20/IS21 Series features a three-axis camera and lens positioning system that is capable of a wide variety of pan and tilt angles.

The day/night models feature a high resolution (540 TVL) color camera with auto iris and varifocal lens. Application examples include environments that require monochrome images at night and color images during the day.

The color models feature a high resolution (540 TVL) color camera with auto iris and varifocal lens. Application examples include all general-purpose environments.

MODELS

IS21-CHV10S	Clear dome, color, surface mount, NTSC
IS21-CHV10F	Clear dome, color, flush mount, NTSC
IS20-CHV10S	Smoke dome, color, surface mount, NTSC
IS20-CHV10F	Smoke dome, color, flush mount, NTSC
IS21-DNV10S	Clear dome, day/night, surface mount, NTSC
IS21-DNV10F	Clear dome, day/night, flush mount, NTSC
IS20-DNV10S	Smoke dome, day/night, surface mount, NTSC
IS20-DNV10F	Smoke dome, day/night, flush mount, NTSC
IS21-CHV10SX	Clear dome, color, surface mount, PAL
IS21-CHV10FX	Clear dome, color, flush mount, PAL
IS20-CHV10SX	Smoke dome, color, surface mount, PAL
IS20-CHV10FX	Smoke dome, color, flush mount, PAL
IS21-DNV10SX	Clear dome, day/night, surface mount, PAL
IS21-DNV10FX	Clear dome, day/night, flush mount, PAL
IS20-DNV10SX	Smoke dome, day/night, surface mount, PAL
IS20-DNV10FX	Smoke dome, day/night, flush mount, PAL

PARTS LIST

SURFACE MODELS

Qty	Description
1	Camera assembly
1	Installation manual

FLUSH MODELS

Qty	Description
1	Camera assembly
1	Installation manual
1	Flush mount kit
	1 Ceiling mount bracket
	5 Fixing screws (M4 x 8)
1	Template
1	Cover

Product Overview

(Day/night model shown)

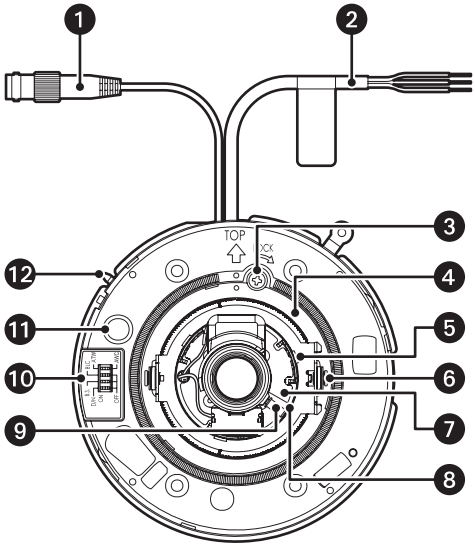


Figure 1. Product Overview of IS20-DN Camera

1. **Video Output Connector:** Transmits composite video signals.
2. **Power Cable:** Supplies 24 V AC or 12 V DC from an external power source.
3. **Panning Table Lock Screw (LOCK):** Fixes the panning table.
4. **Panning Table:** Adjusts the panning position of the camera.
5. **Tilting Table:** Adjusts the tilting position of the camera.
6. **Tilting Lock Screws (left and right):** Fixes the tilting position.
7. **Azimuth Adjuster:** Adjusts the azimuth angle of the camera.
8. **Zoom Lock Lever:** Fixes the zoom position after adjusting.
9. **Focus Lock Lever:** Fixes the focus position after adjusting.

⑩ **Dip Switch:** Selects ON/OFF of white balance, backlight compensation, Adaptive Black Stretch or day/night mode.

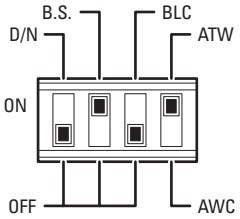


Figure 2. Default Dip Switch Settings

Simple day/night mode selector (D/N) for color models:

ON: The camera selects black-and-white mode if the picture is dark, or color mode if the picture is bright enough.

OFF (default): Color picture is displayed normally.

NOTE: The simple day/night function is established by using the SENSE UP function for black-white images. The IR filter is secured.

Day/night mode selector [D/N] for day/night models:

ON: The camera selects black-and-white mode if the picture is dark, or color mode if the picture is bright enough. When set to ON, The camera switches from color to black/white images when the ambient brightness (illuminance) of the camera is approximately 0.6 lx or less.

OFF (default): Color picture is displayed normally.

NOTES:

- To obtain color images, a sufficient level of illuminance (approximately 30 lx or more) is required.
- The switching illuminance level varies depending on subjects and light sources.
- The switching illuminances described above are reference values. The switching illuminance shall be decided based on the actual installation environment.

Adaptive black stretch selector (B.S.):

ON (default): The dark area of the object is automatically corrected to lighten it.

OFF: Does not compensate.

NOTE: In the case of "ON" setting, noise may be increased in the dark area of the object.

In addition, darkness and brightness may be emphasized in the vicinity of the boundary between the dark and bright areas.

Backlight compensation selector (BLC):

ON: Compensates the background automatically if it is brighter than the object.

OFF (default): This mode is used when the front of the object is extremely bright.

NOTE: Under some conditions, such as extremely strong backlight, the desired compensation effect may not be achieved even if the mode is set to ON to detect the backlight level.

White balance selector (ATW/AWC):

ATW (default): Activates the automatic color temperature tracking mode. The camera continuously measures the color temperature of the light source and automatically adjusts the white balance. The adjustment of the color temperature ranges from approximately. 2700 K to 6000 K.

AWC: Activates the automatic white balance control mode. This adjustment is suitable for a location where a light source is stable. The adjustment of the color temperature ranges from approximately 2000 K to 10000 K.

⑪ **Monitor Output Jack (RCA jack):** Connects the LCD monitor and such devices for checking images.

⑫ **Marker**: This marker is used when the top cover is installed.

Installation

The following installation should be performed by qualified service personnel or system installers.

NOTES:

- Procure 4 mounting screws according to the material of the installation area. In this case, wood screws and nails should not be used.
- The recommended tightening torque is M4: 1.6 N·m (16 kgf·cm).
- The required pullout capacity of a single screw/bolt is 196 N (20 kgf) or more.
- If a ceiling board, such as plaster board, is too weak to support the total weight, the area shall be sufficiently reinforced.
- The protection sheet attached to the dome cover should be peeled off after installation.

DISASSEMBLING THE CAMERA

1. Peel off the protection sheet from the top cover (refer to Figure 3).

   Do not remove completely as this protects the dome during installation.

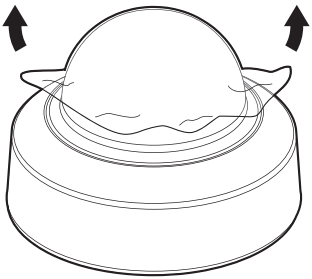


Figure 3. Removing the Protection Sheet

2. Remove the top cover.
   a. Unscrew the top cover fixing screw (refer to Figure 4).

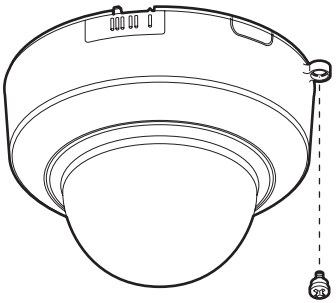


Figure 4. Removing the Top Cover Fixing Screw

b. Adjust the marker on this unit to "I" on the top cover, and turn the top cover counterclockwise to remove it (refer to Figure 5).

NOTE: The dome cover and the inner dome cover are joined into a single unit; therefore, never try to remove them.

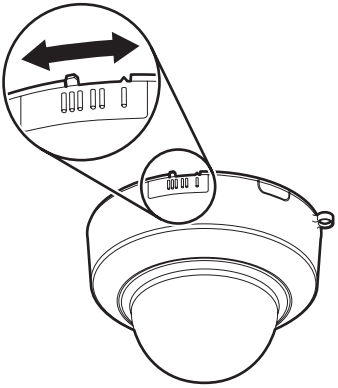


Figure 5. Adjusting the Top Cover Marker

MOUNTING THE CAMERA

The mounting requirements are shown as follows:

Mounting Site	Model	Recommended Screw and Tightening Torque	Number of Screws	Minimum Pullout Strength
Ceiling/wall	Two-gang junction box	M4 (or appropriate), 1.6 N·m (16 kgf·cm)	4 pcs.	196 N/pc.(20 kgf/pc.)
Ceiling/wall	Surface mount	M4 (or appropriate), 1.6 N·m (16 kgf·cm)	4 pcs.	196 N/pc.(20 kgf/pc.)
Ceiling	Flush mount	–	–	*

*Make sure that the installed mount bracket can support more than five times the weight of the camera.

USING A 2-GANG JUNCTION BOX

1. Install the 2-gang junction box (not supplied) onto the wall/ceiling.
   a. When using a 2-gang junction box (4 x 4 inches), procure one locally that meets the dimensions in Figure 6.
   b. Locally procure four camera mounting screws suitable for the installation surface and structure of the wall/ceiling or 2-gang junction box.
2. Mount the camera onto the 2-gang junction box with four screws (not supplied).
3. Fasten all of the mounting screws (refer to Figure 6).

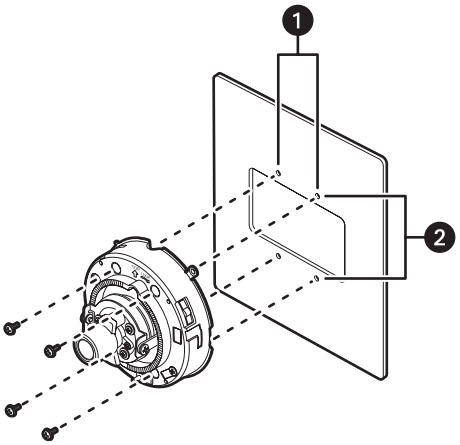


Figure 6. Mounting the Camera to a 2-Gang Junction Box

1. 46 mm (1.81 inches)
2. 83.5 mm (3.27 inches)

SURFACE MOUNTING

1. Prepare the mounting space.
   - If the camera is directly mounted on a wall/ceiling, align the camera mounting position with the position of the hole through which the cables are routed, and then make the hole.
   - If no hole is made through a wall/ceiling and open wiring along a wall/ceiling is used, remove the dust guard cap, take out the cable, replace the dust guard cap, and then process the cover so that the cables can be routed through the side of the cover.
2. Place the camera onto the wall/ceiling and mark four screw positions with a pen.
3. Mount the camera onto the wall/ceiling with the four screws (not supplied).
4. Fasten all of the mounting screws.

FLUSH MOUNTING

⚠ **WARNING:** Be careful when preparing the mounting hole. If the mounting hole is too large, the ceiling mount bracket cannot be mounted securely.

1. Using the supplied template, prepare a mounting hole that is 160 mm (6.29 inches) in diameter.
2. Position two of the spring hooks of the camera (refer to Figure 7).

   When the ceiling mount bracket is installed after positioning the spring hooks in the opposite side, they may become difficult to pull out.

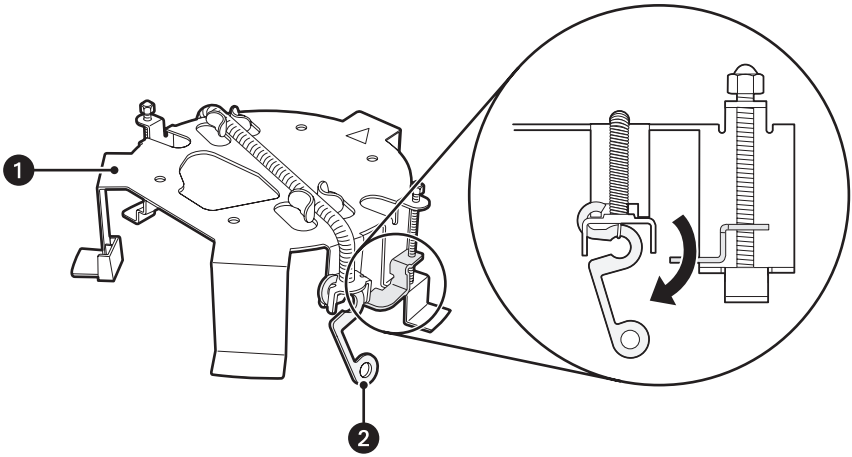


Figure 7. Positioning the Spring Hooks

1 Main Body
2 Spring Hook

3. Attach the ceiling mount bracket onto the ceiling board (refer Figure 8).

   NOTE: Maximum thickness of the ceiling board is 30 mm (1.18 inches) for installation.

   Loosen the clamping screws until the length between the clamp plates becomes wider than the thickness of the ceiling board, and then clamp the ceiling board by tightening the clamping screws. The recommended tightening torque is 0.61 N·m (6.0 kgf·cm).

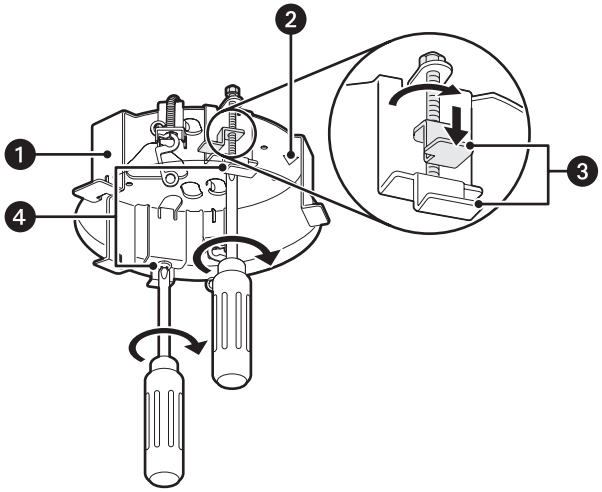


Figure 8. Attaching the Ceiling Mount Bracket

1. Main Body
2. Triangle Mark
3. Clamp Plates
4. Clamping Screws

4. Connect the video cable and the power cord to the camera (refer to *Wiring* on page 16).
5. Attach the camera to the ceiling mount bracket using 4 fixing screws (supplied).

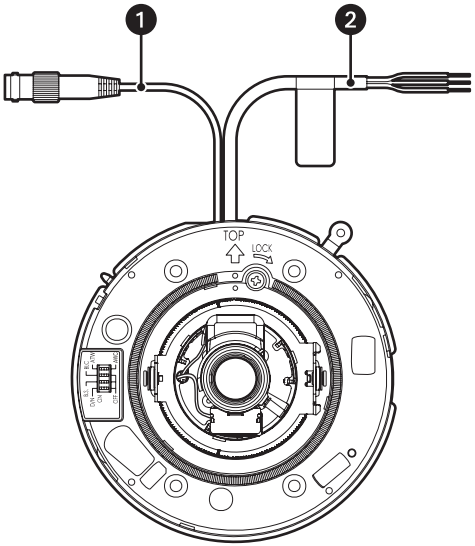


Figure 9. Video Output Connector and Power Cable

1 Video Output Connector

2 Power Cable

VIDEO OUTPUT CONNECTION

NOTE: When connecting the coaxial cable to the video output connector, make sure that the connector of the coaxial cable is locked firmly.

Connect the video output connector to the monitor, or other system devices, with coaxial cable (not supplied).

Table A. Maximum Extensible Cable Length

Cable Type	Extensible Length (approximate)
RG-59/U (3C-2V)	250 m
RG-6/U (5C-2V)	500 m
RG-11/U (7C-2V)	600 m
RG-15/U (10C-2V)	800 m

POWER CONNECTION

Connect the 3-conductor cable of the camera to the power supply.

Table B. Power Wire Colors and Functions

Wire Color	12 V DC	24 V AC
Brown	Positive	Live
Blue	Negative	Neutral
Green/yellow	—	Grounding

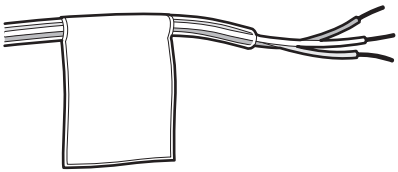


Figure 10. Power Cable

WARNINGS:

- Be sure to connect the GND (grounding) lead of the camera and grounding terminal of the power supply when using a 24 V AC power source.
- Only connect this product to a 24 V AC or 12 V DC Class 2 power supply.

CABLE LENGTH AND WIRE GAUGE

24 V AC

The voltage supplied to the power terminals of the camera should be within 19.5 V AC and 28 V AC.

Table C. 24 V AC Recommended Cable Length and Thickness

Copper Wire Size (AWG)		**#24 (0.22 mm²)**	**#22 (0.33 mm²)**	**#20 (0.52 mm²)**	**#18 (0.83 mm²)**
Length of Cable (approx.)	(m)	20	30	45	75

12 V DC

Use the formula below to calculate the power cable and power supply. The voltage supplied to the power terminals of the camera should be within 10.8 V DC and 16 V DC.

Table D. 12 V DC Resistance of Copper Wire (at 20 °C)

Copper Wire Size (AWG)	**#24 (0.22 mm²)**	**#22 (0.33 mm²)**	**#20 (0.52 mm²)**	**#18 (0.83 mm²)**
Resistance Ω/m	0.078	0.050	0.03	0.018

$10.8 \text{ V DC} \leq V_A - 2 (R \times I \times L) \leq 16 \text{ V DC}$

L = Cable length (m)

R = Resistance of copper wire (Ω/m)

V_A = DC output voltage of power supply unit

I = DC current consumption (A). Refer to *Specifications* on page 25.

IMAGE ADJUSTMENT

PAN, TILT, AND AZIMUTH ADJUSTMENT

WARNINGS:

- Do not touch the iris motor.
- Do not hold the camera by the lens unit when adjusting pan, tilt, or azimuth.

1. Rotate the panning table (320-degree range) to adjust the panning position of the camera (refer to Figure 11). The adjusting range is from +180 degrees (clockwise) to –140 degrees (counterclockwise).
2. Tighten the panning table lock screw.

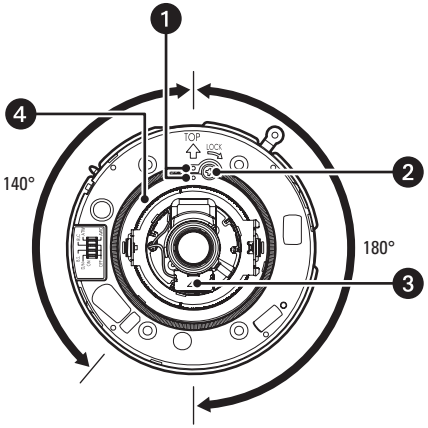


Figure 11. Adjusting the Panning Position

1. Indication
2. Panning Table Lock Screw
3. Indication
4. Panning Table

3. Rotate the tilting table (±75-degree range) to adjust the tilting position of the camera (refer to Figure 12).

NOTES:

- This lens can also be rotated in the reverse direction, but the image azimuth is reversed. In such a case, turn the panning table to the 180-degree side to correct the azimuth image.
- When used at an angle that is close to horizontal, the shadow of the dome cover may be projected.

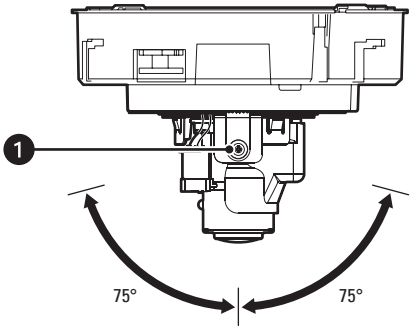


Figure 12. Adjusting the Tilting Position (Day/Night Model Shown)

1 Tilting Lock Screw

4. Tighten both the panning table lock screw and the tilting lock screws on both sides after adjusting the tilt position of the camera. The recommended tightening torque is 0.59 N·m (6 kgf·cm).
5. Rotate the azimuth adjuster (±100-degree range) to adjust the azimuth angle of the image (refer to Figure 13).

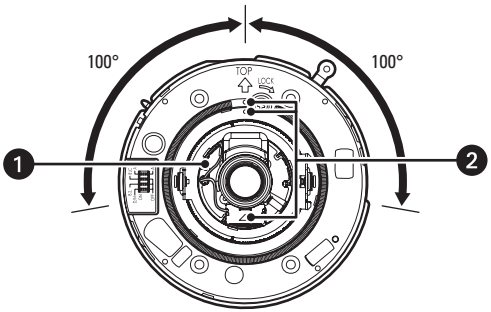


Figure 13. Adjusting the Azimuth Angle (Color Model Shown)

1 Indication

2 Azimuth Adjuster

ZOOM AND FOCUS ADJUSTMENT

1. Loosen the zoom lock lever and move the lever between TELE and WIDE to obtain the appropriate angle of view (refer to Figure 14).
2. Tighten the zoom lock lever.
3. Loosen the focus lock lever and move the lever between FAR and NEAR to obtain the optimum focus.
4. Tighten the focus lock lever.

NOTE: You can change the angle of view by moving the zoom lock lever, and you can move the focus lock lever to adjust the focus.

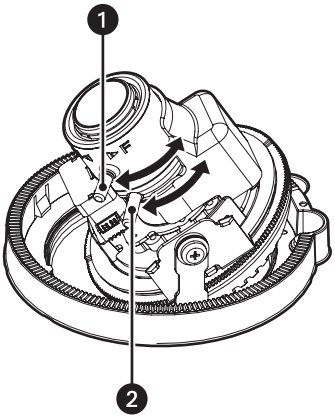


Figure 14. Adjusting the Zoom and Focus

1. Focus Lock Lever
2. Zoom Lock Lever

ASSEMBLING THE CAMERA

1. Mount the top cover (refer to Figure 15):
   a. Adjust the marker of this unit to "I" on the top cover to install the top cover.

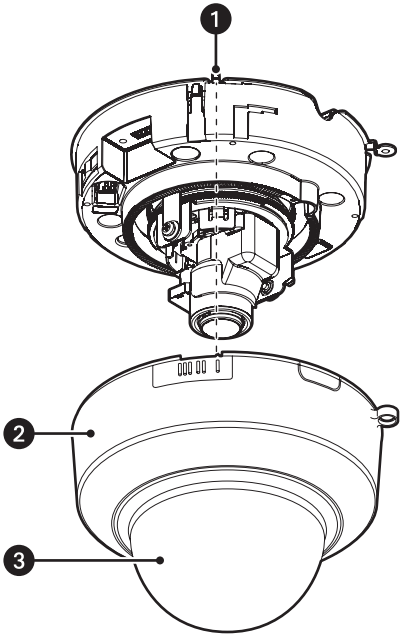


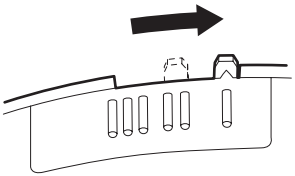
Figure 15. Mounting the Top Cover

1. Marker
2. Top Cover
3. Dome Cover Block

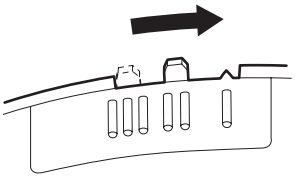
   b. Rotate the top cover clockwise to adjust the marker to "II."

c. Turn the dome cover block to the right and left while watching the monitor. Make adjustments so that no eclipse is caused.

⚠ **WARNING:** If the dome cover block is moved with unreasonable force, it may break.



d. Rotate the top cover clockwise to adjust the marker to "III."



2. Secure the top cover and the camera main unit with an accessory fixing screw (M3).

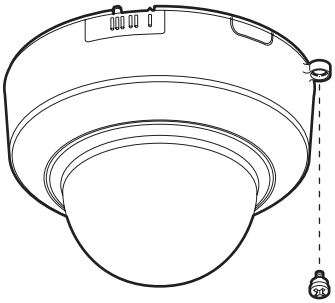


Figure 16. Securing the Top Cover

3. (*Flush mount models only*) Attach the supplied flush mount cover:
   a. Match the logos on the cover and on the main body of the camera.
   b. Pull out both of the spring hooks and attach the hooks to the cover.
   c. Make sure that the cover is attached to the ceiling with no space between them.

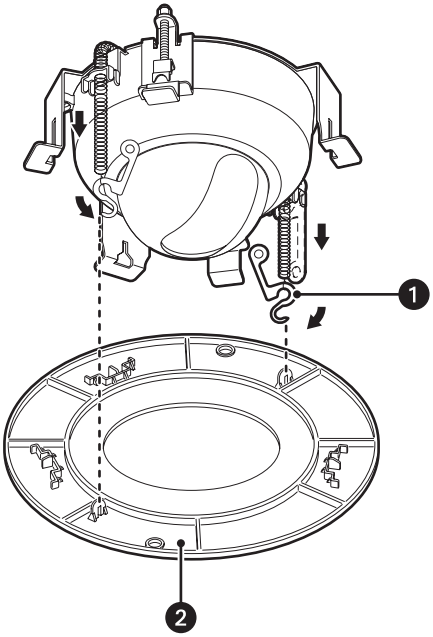


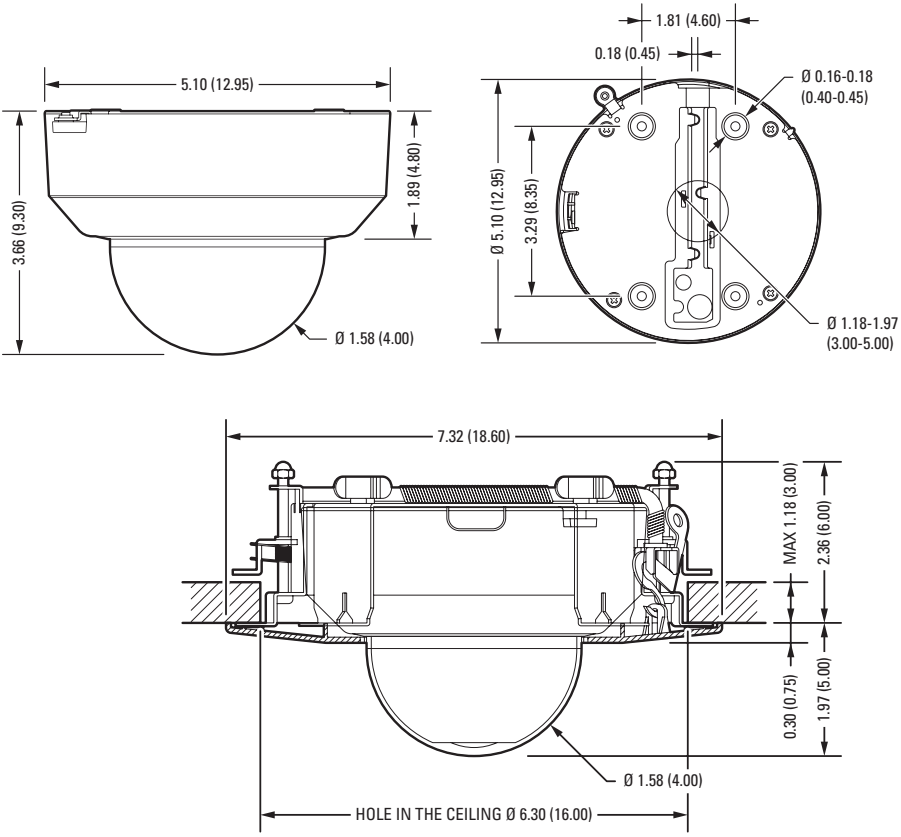
Figure 17. Attaching the Flush Mount Cover

1. Spring Hooks
2. Cover

Specifications

Power Source and Consumption		
PAL	24 V, 50 Hz, 2.7 W (AC); 12 V, 220 mA (DC)	
NTSC	24 V, 60 Hz, 2.7 W (AC); 12 V, 220 mA (DC)	
Image Sensor	1/3 inch interline transfer CCD	
Effective Pixels		
PAL	752 (H) x 582 (V)	
NTSC	768 (H) x 494 (V)	
Scanning Area	4.9 (H) x 3.7 (V) mm (0.19" x 0.15")	
Scanning System	2:1 interlace	
Scanning Lines		
PAL	625 lines	
NTSC	525 lines	
Scanning Frequency	PAL	NTSC
Horizontal	15.625 kHz	15.734 kHz
Vertical	50.00 Hz	59.94 Hz
Synchronization	Internal	
Resolution		
Horizontal	540 TV lines (at center)	
Vertical	400 TV lines (PAL, at center); 350 TV lines (NTSC at center)	
Video Output	1.0 V[p-p] PAL/NTSC composite 75 Ω	
White Balance	ATW/AWC	
Signal-to-Noise Ratio	50 dB (equivalent to AGC Off, weight On)	
Minimum Illumination at F1.3 (WIDE)		
Clear Dome	0.6 lx (C/L), 0.05 lx (B/W, day/night models), 0.4 lx (B/W, color models)	
Smoked Dome	1.7 lx (C/L), 0.15 lx (B/W, day/night models), 1.1 lx (B/W, color models)	
Switch Function	White balance selector (ATW/AWC), backlight compensation selector (ON/OFF), adaptive black stretch selector (ON/OFF), day/night mode selector (ON/OFF)	
Lens	3.6X variable focal lens	
Focal Length	2.8 to 10.0 mm (0.11 to 0.39")	
F Number	F1.3 (WIDE) to F3.1 (TELE)	
Focus Range	∞ to 1.2 m (3.9 ft)	
Angle of View	Horizontal	Vertical
Day/Night Models	100°50′ (WIDE) to 27°39′ (TELE)	73°51′ (WIDE) to 20°45′ (TELE)
Color Models	100°18′ (WIDE) to 27°39′ (TELE)	73°33′ (WIDE) to 20°45′ (TELE)
Adjusting Angle		
Panning range	+180° to –140°	
Tilting range	±75°	
Azimuth range	±100°	
Ambient Temperature	–10 °C to +50 °C	
Ambient Humidity	Less than 90%	
Dimensions		
Surface Mount	ø129.5 mm x 93 mm (H) (ø5.1 x 3.66")	
Flush Mount	ø186 mm x 110 mm (H) (ø7.32 x 4.33")	
Weight		
Surface Mount	430 g (0.95 lb)	
Flush Mount	710 g (1.57 lb)	

(Weights and dimensions indicated are approximate.)



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

Information on disposal for users of waste electrical and electronic equipment (private households)

This symbol on the products and/or accompanying documents means that used electrical and electronic products should not be mixed with general household waste.

For proper treatment, recovery and recycling, please take these products to designated collection points, where they will be accepted on a free of charge basis. Alternatively, in some countries you may be able to return your products to your local retailer upon the purchase of an equivalent new product.

Disposing of this product correctly will help to save valuable resources and prevent any potential negative effects on human health and the environment which could otherwise arise from inappropriate waste handling. Please contact your local authority for further details of your nearest designated collection point.

Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.

For business users in the European Union

If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

Information on disposal in other countries outside the European Union

This symbol is only valid in the European Union.

If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.

PRODUCT WARRANTY AND RETURN INFORMATION

WARRANTY

Pelco will repair or replace, without charge, any merchandise proved defective in material or workmanship **for a period of one year** after the date of shipment.

Exceptions to this warranty are as noted below:

- Five years:
  - Fiber optic products
  - Unshielded Twisted Pair (UTP) transmission products
  - CC3701H-2, CC3701H-2X, CC3751H-2, CC3651H-2X, MC3651H-2, and MC3651H-2X camera models
- Three years:
  - Pelco-designed fixed network cameras and network dome cameras with Sarix™ technology.
  - Pelco-branded fixed camera models (CCC1390H Series, C10DN Series, C10CH Series, and IP3701H Series)
  - EH1500 Series enclosures
  - Spectra® IV products (including Spectra IV IP)
  - Camclosure® Series (IS, ICS, IP) integrated camera systems
  - DX Series digital video recorders (except DX9000 Series which is covered for a period of one year), DVR5100 Series digital video recorders, Digital Sentry® Series hardware products, DVX Series digital video recorders, and NVR300 Series network video recorders
  - Endura® Series distributed network-based video products
  - Genex® Series products (multiplexers, server, and keyboard)
  - PMCL200/300/400 Series LCD monitors
  - PMCL5xx Series FHD monitors
- Two years:
  - Standard varifocal, fixed focal, and motorized zoom lenses.
  - DF5/DF8 Series fixed dome products
  - Legacy® Series integrated positioning systems
  - Spectra III™, Spectra Mini, Spectra Mini IP, Esprit®, ExSite®, and PS20 scanners, including when used in continuous motion applications.
  - Esprit Ti and TI2500 Series thermal imaging products
  - Esprit and WW5700 Series window wiper (excluding wiper blades).
  - CM6700/CM6800/CM9700 Series matrix
  - Digital Light Processing (DLP®) displays (except lamp and color wheel). The lamp and color wheel will be covered for a period of 90 days. The air filter is not covered under warranty.
  - Intelli-M® eIDC controllers
- One year:
  - Video cassette recorders (VCRs), except video heads. Video heads will be covered for a period of six months.
- Six months:
  - All pan and tilts, scanners, or preset lenses used in continuous motion applications (preset scan, tour, and auto scan modes).

Pelco will warrant all replacement parts and repairs for 90 days from the date of Pelco shipment. All goods requiring warranty repair shall be sent freight prepaid to a Pelco designated location. Repairs made necessary by reason of misuse, alteration, normal wear, or accident are not covered under this warranty.

Pelco assumes no risk and shall be subject to no liability for damages or loss resulting from the specific use or application made of the Products. Pelco's liability for any claim, whether based on breach of contract, negligence, infringement of any rights of any party or product liability, relating to the Products shall not exceed the price paid by the Dealer to Pelco for such Products. In no event will Pelco be liable for any special, incidental, or consequential damages (including loss of use, loss of profit, and claims of third parties) however caused, whether by the negligence of Pelco or otherwise.

The above warranty provides the Dealer with specific legal rights. The Dealer may also have additional rights, which are subject to variation from state to state.

If a warranty repair is required, the Dealer must contact Pelco at (800) 289-9100 or (559) 292-1981 to obtain a Repair Authorization number (RA), and provide the following information:

1. Model and serial number
2. Date of shipment, P.O. number, sales order number, or Pelco invoice number
3. Details of the defect or problem

If there is a dispute regarding the warranty of a product that does not fall under the warranty conditions stated above, please include a written explanation with the product when returned.

Method of return shipment shall be the same or equal to the method by which the item was received by Pelco.

RETURNS

To expedite parts returned for repair or credit, please call Pelco at (800) 289-9100 or (559) 292-1981 to obtain an authorization number (CA number if returned for credit, and RA number if returned for repair) and designated return location.

All merchandise returned for credit may be subject to a 20 percent restocking and refurbishing charge.

Goods returned for repair or credit should be clearly identified with the assigned CA or RA number and freight should be prepaid. 2-10-10

REVISION HISTORY

Manual #	Date	Comments
C3472M	6/10	Original version.
C3472M-A	7/10	Made minor formatting and specification changes, including a new dimension drawing.
C3472M-B	8/10	Made changes to Important Safety Instructions and Regulatory Notices to comply with manufacturing requests.
C3472M-C	9/10	Added color and day/night model information to cover page and product description.

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